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International Oil Developments

Secret
9 May 1974

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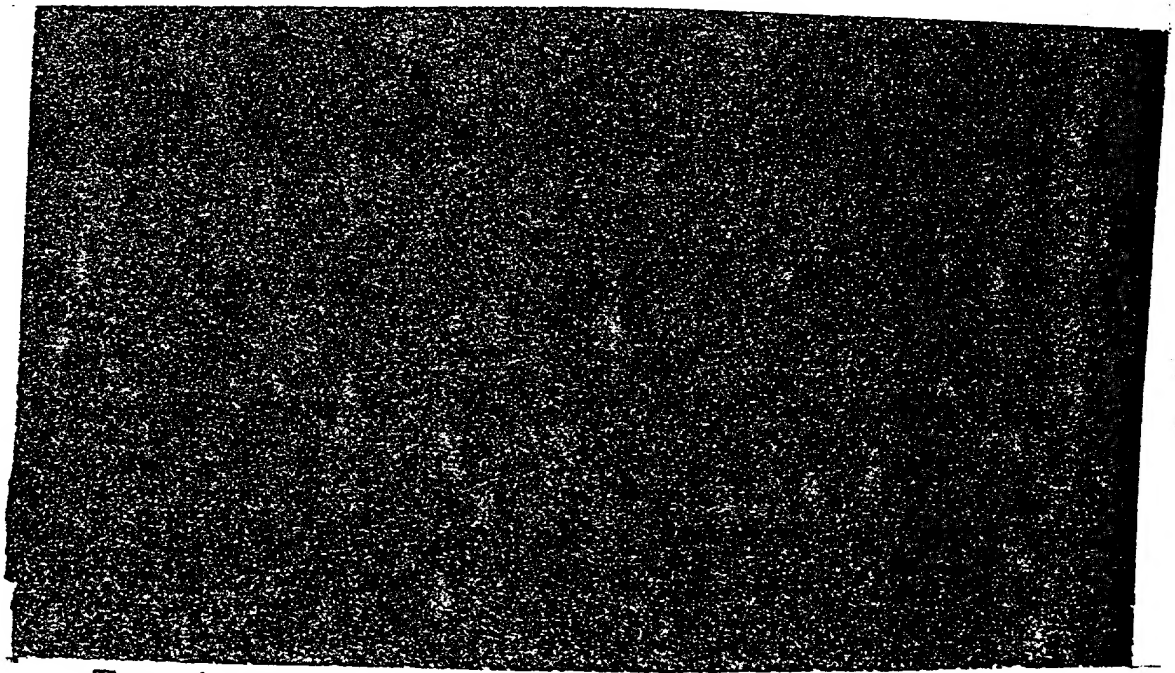
INTERNATIONAL OIL DEVELOPMENTS

Current Overview



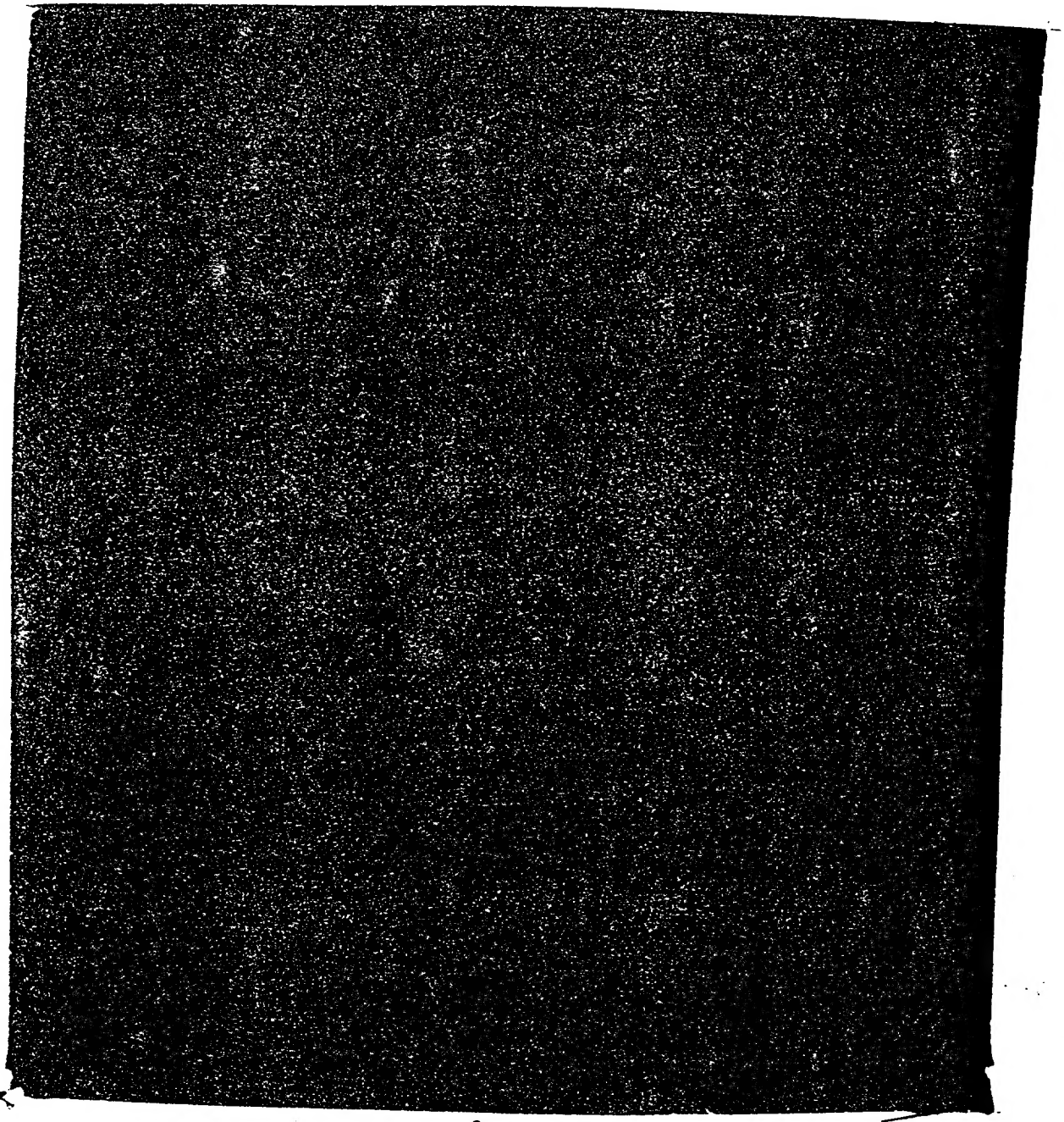
The producer governments are waiting to see what Saudi Arabia will do about prices and equity participation.

A recent secret Stanford Research Institute study for the Saudi government suggests that the Saudis might be better off producing at much lower levels.

The Market Situation

CRUDE OIL PRICING POLICIES IN FLUX

The average prices that foreign companies will be paying for crude oil from OPEC countries this year are still unknown.



OPEC Countries: Equity and Buyback Costs

	Share of Government Ownership (Percent)	US $ per Barrel: Posted Price	Cost of Equity Oil	Cost of Buyback Oil	Comments
[redacted]					
Saudi Arabia	25	11.651	7.109	Being negotiated	New participation agreement pending
[redacted]					

Pages: 5-11

Exemptions: (b)(1), (b)(3)

[redacted]

* * * *

SAUDI ARABIAN OIL POLICY PROBLEM

The Saudi Arabian government is wrestling with the problem of oil prices. High-level Saudi officials have stated publicly [redacted] that the posted prices set in December are too high and should come down. [redacted]

The Saudis' stumping for lower prices already has created dissension – particularly with the Shah of Iran, who repeatedly has chided Riyadh for its position. [redacted]

[redacted] A recent Stanford Research Institute study commissioned by Riyadh concludes that the production level that would maximize the long-term value of oil reserves is between 3 million b/d and 8 million b/d. [redacted]

* * * *

[redacted]

Pages: 14-24

Exemptions: (b)(1), (b)(3)

STATISTICAL SURVEY

World Crude Oil Production

Thousand b/d

	September 1973 (Pre-Crisis Level)	1973	1974 January	1974 February	1974 March
Western hemisphere	16,042	16,118	16,016	15,960	15,900
United States	9,149	9,189	9,061	9,050	9,000
Venezuela	3,387	3,364	3,274	3,230	3,230
Canada	1,745	1,798	1,845	1,850	1,850
Mexico	470	465	485	500	490
Ecuador	210	204	230	230	230
Other	1,081	1,098	1,121	1,100	1,100
Eastern hemisphere	41,894	39,552	39,939	40,490	41,230
Western Europe	389	370	340	350	350
Middle East	22,977	21,158	20,754	21,230	21,830
Saudi Arabia	8,574	7,607	7,522	7,800	8,130
Iran	5,793	5,861	6,103	6,160	6,160
Kuwait	3,520	3,024	2,838	2,850	2,840
Iraq	2,167	1,964	1,794	1,800	1,840
Abu Dhabi (UAE)	1,381	1,298	1,210	1,250	1,500
Qatar	608	570	518	520	520
Oman	302	293	299	300	290
Dubai (UAE)	273	220	180	250	250
Other	359	321	290	300	300
Africa	6,132	5,902	5,696	5,850	5,910
Libya	2,286	2,187	2,032	1,940	1,880
Nigeria	2,100	2,053	2,185	2,250	2,300
Algeria	1,100	1,070	960	960	1,000
Other	646	592	519	700	730
Asia-Pacific	2,288	2,257	2,459	2,370	2,450
Indonesia	1,338	1,324	1,450	1,420	1,450
Other	950	933	1,009	950	1,000
Communist countries	10,108	9,865	10,690	10,690	10,690
USSR	8,663	8,470	8,900	8,900	8,900
China	1,060	1,050	1,400	1,400	1,400
Romania	275	275	280	280	280
Other	110	110	110	110	110
World total	57,936	55,670	55,935	56,450	57,130
Of which:					
OPEC members[1]	32,737	30,746	30,296	30,660	31,330
OAPEC members[2]	20,311	18,272	17,254	17,590	18,210

1. The members of the Organization of Petroleum Exporting Countries are Algeria, Ecuador, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela.
2. The members of the Organization of Arab Petroleum Exporting Countries are Algeria, Bahrain, Egypt, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, Syria, and United Arab Emirates.

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Recent Trends in Arab Oil Production[1]

	1973				1974			
	September	October	November	December	January	February	March	April
	Production (Thousand b/d)							
Total	20,613	18,661	15,684	16,005	17,553	17,890	18,500	19,480
Saudi Arabia[2]	8,574	7,798	6,269	6,616	7,522	7,800	8,130	8,900
Kuwait[2]	3,520	3,058	2,582	2,556	2,838	2,850	2,840	2,850
Libya	2,286	2,384	1,766	1,769	2,032	1,940	1,880	1,750
Iraq	2,167	1,797[3]	2,026	2,136	1,794	1,800	1,840	1,900
Abu Dhabi (UAE)	1,381	1,340	1,153	1,016	1,210	1,250	1,500	1,600
Algeria	1,100	1,020	880	860	960	960	1,000	1,000
Qatar	806	598	467	460	518	520	520	530
Oman	302	304	302	302	299	300	290	300
Dubai (UAE)	273	214[4]	140[4]	141[4]	180[4]	250[4]	250[4]	300
Other[5]	402	148[6]	99[6]	149[6]	200[6]	220[6]	250[6]	350
	Percent Decrease From September 1973							
For all countries	—	9	24	22	15	13	10	5

1. This table illustrates the effect of the OAPEC decisions of 4 November and 25 December on Arab oil production through April 1974. Iraq did not sign the agreements; Oman, which is not a member of OAPEC, did not reduce production.
2. Including approximately one-half of Neutral Zone production.
3. Production reduced as a result of war damage to export facilities.
4. Production reduced by offshore well fire.
5. Including data for Bahrain, Egypt, and Syria.
6. Production decreased in Egypt and Syria as a result of war activity.

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Exemptions: (b)(1), (b)(3)

Estimated Oil Imports, by Source[1]
1973

Thousand b/d and Percent of Imports

		Arab Countries													
	Total	Total	Saudi Arabia	Kuwait	Libya	Iraq	Abu Dhabi	Al-geria	Other	Iran	Vene-zuela	Indo-nesia	Canada	Nigeria	Other
United States	6,200	1,590	590	160	350	50	160	140	140	420	1,840	250	1,100	550	450
%	100.0	25.6	9.5	2.6	5.6	0.8	2.6	2.3	2.3	6.8	29.7	4.0	17.7	8.9	7.3
Japan	5,400	2,390	1,240	540	20	Negl.	430	....	160	1,730	10	840	—	100	330
%	100.0	44.3	23.0	10.0	0.4	Negl.	8.0	....	3.0	32.0	0.2	15.6	—	1.9	6.1
Canada	1,000	220	80	Negl.	40	20	60	....	20	180	470	Negl.	—	80	50
%	100.0	22.0	8.0	Negl.	4.0	2.0	6.0	....	2.0	18.0	47.0	Negl.	—	8.0	5.0
Western Europe	15,200	10,600	4,000	1,700	1,590	1,160	600	780	770	2,150	320	Negl.	—	1,130	1,000
%	100.0	69.7	26.3	11.2	10.5	7.6	3.9	5.1	5.1	14.1	2.1	Negl.	—	7.4	6.6
United Kingdom	2,300	1,460	550	400	240	60	50	50	130	460	80	Negl.	—	180	130
%	100.0	63.5	23.6	17.2	10.3	2.6	2.1	2.1	5.6	19.7	3.4	Negl.	—	7.7	5.6
West Germany	2,250	1,610	480	90	550	30	110	280	70	270	40	Negl.	—	200	130
%	100.0	71.6	21.3	4.0	24.4	1.3	4.9	12.4	3.1	12.0	1.8	Negl.	—	8.9	5.8
Italy	2,440	1,930	630	200	460	430	....	....	210	330	20	—	—	10	150
%	10.0	79.1	25.8	8.2	18.9	17.6	....	....	8.6	13.5	0.8	—	—	0.4	6.1
France	2,780	2,070	620	320	130	380	290	230	100	220	40	—	—	250	200
%	100.0	74.5	22.3	11.5	4.7	13.7	10.4	8.3	3.6	7.9	1.4	—	—	9.0	7.2
Netherlands[2]	2,090	1,340	690	380	60	10	80	20	100	440	50	—	—	220	40
%	100.0	64.1	33.0	18.2	2.9	0.5	3.8	1.0	4.8	21.1	2.4	—	—	10.5	1.9
Belgium-Luxembourg	720	550	290	120	30	30	10	50	20	100	20	—	—	30	20
%	100.0	76.4	40.3	16.7	4.2	4.2	1.4	6.9	2.8	13.9	2.8	—	—	4.2	2.8
Spain	1,000	820	470	90	40	50	....	110	60	120	40	—	—	10	10
%	100.0	82.0	47.0	9.0	4.0	5.0	....	11.0	6.0	12.0	4.0	—	—	1.0	1.0
Other	1,590	800	270	100	80	170	60	40	80	210	30	—	—	230	320
%	100.0	50.3	17.0	6.3	5.0	10.7	3.8	2.5	5.0	13.2	1.9	—	—	14.5	20.1

1. This table allocates imports on a direct and indirect basis – i.e., refined products from export refineries are traced to the source of the crude oil.
2. Excluding oil transhipped to other West European countries.

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Oil Company Control of Oil Production in OPEC Countries, January 1974

The attached table lists 13 foreign oil companies or foreign operating groups that control about three-fourths of the crude oil production in the OPEC countries. This list includes all the companies that produce more than 150,000 b/d. The state oil companies in Iraq, Algeria, and Libya control more than 50% of the oil not controlled by these companies. The remainder is controlled by several producer-state companies and small foreign companies. The following tabulation is a summary of the table:

Company	Thousand b/d	
	Maximum[1]	Minimum[2]
Total	25,515	19,456
International "Majors" subtotal	22,699	17,313
British Petroleum	4,785	3,630
Exxon	4,505	3,755
Texaco	3,287	2,434
Standard Oil (California)	3,072	2,219
Royal Dutch/Shell	2,845	2,360
Gulf	2,585	1,655
Mobil	1,620	1,260
Occidental	325	160
Continental	305	170
Marathon	245	225
French	1,256	1,013
Italian	215	140
Japanese	470	435
Total OPEC production	30,296	

1. The maximum column shows the amount of oil physically produced by the selected international oil companies (those with production of 150,000 b/d or more). It does not take into account government ownership through participation, nationalization, or sales of royalty oil. It is certain the companies will not have this amount of oil to sell.

2. The minimum column shows the amount of oil the ompanies control through equity ownership. This amount could be reduced further by producing government's exercising their option to take royalties in kind (in most cases, 12-1/2% of company equity oil) rather than in cash. This column is almost certain to be too low because we expect the governments to continue to sell a large share of state-owned oil back to the companies. (UNCLASSIFIED)

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Estimated Oil Company Control of Oil Production
in OPEC Countries, January 1974

Thousand b/d

Company/Country	Maximum	Minimum
Total	25,515	19,456
International "Majors"	22,699	17,313
Abu Dhabi (UAE)	685	515
Ecuador	220	220
Indonesia	1,080	430
Iran	4,815	4,815
Iraq	290	290
Kuwait	2,580	1,030
Libya	375	190
Nigeria	2,054	1,303
Qatar	440	175
Saudi Arabia	7,265	5,450
Venezuela	2,895	2,895
British Petroleum	4,785	3,630
Abu Dhabi (UAE)	350	260
Iran	2,160	2,160
Iraq	200	200
Kuwait	1,290	515
Nigeria	725	470
Qatar	60	25
Exxon	4,505	3,755
Abu Dhabi (UAE)	85	65
Indonesia	35	15
Iran	380	380
Libya	290	145
Qatar	30	10
Saudi Arabia	2,180	1,635
Venezuela	1,505	1,505
Texaco	3,287	2,434
Ecuador	110	110
Indonesia	505	200
Iran	380	380
Nigeria	7	4
Saudi Arabia	2,180	1,635
Venezuela	105	105
Standard Oil (California)	3,072	2,219
Indonesia	505	200
Iran	380	380
Nigeria	7	4
Saudi Arabia	2,180	1,635
Royal Dutch/Shell	2,845	2,360
Abu Dhabi (UAE)	165	125
Iran	755	755
Iraq	90	90
Nigeria	725	470
Qatar	320	130
Venezuela	790	790

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Estimated Oil Company Control of Oil Production
in OPEC Countries, January 1974
(Continued)

Thousand b/d

Company/Country	Maximum	Minimum
Gulf	2,585	1,655
Ecuador	110	110
Iran	380	380
Kuwait	1,290	515
Nigeria	390	235
Venezuela	415	415
Mobil	1,620	1,260
Abu Dhabi (UAE)	85	65
Indonesia	35	15
Iran	380	380
Libya	85	45
Nigeria	200	120
Qatar	30	10
Saudi Arabia	725	545
Venezuela	80	80
International independents including foreign governments	2,816	2,143
Occidental		
Libya	325	160
Continental	305	170
Dubai (UAE)	60	45
Libya	245	125
Marathon		
Libya	245	225
French (CFP, ERAP, Aquataine)	1,256	1,013
Abu Dhabi (UAE)	335	150
Algeria	215	215
Dubai (UAE)	50	50
Iran	325	325
Iraq	200	200
Libya	6	3
Nigeria	65	45
Qatar	60	25
Italian (ENI)	215	140
Iran	55	55
Libya	130	65
Nigeria	30	20
Japanese	470	435
Abu Dhabi (UAE)	150	115
Kuwait	160	160
Saudi Arabia	160	160
Total OPEC production	30,296	

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Ownership of World Oil Refining Capacity [1]

1 January 1974

Thousand b/d

Company	Capacity
Total	40,050
International "Majors"	18,795
Exxon	5,240
Royal Dutch/Shell	4,790
British Petroleum	2,710
Texaco	1,945
Mobil	1,560
Standard Oil (California)	1,415
Gulf	1,135
Independents	13,365
Japanese (30 companies)	4,030
Italian (15 companies)	2,110
CFP (35% French government owned)	1,065
Spanish (6 companies)	670
Amerada-Hess (US)	590
Petrofina (Belgian)	425
New England Petroleum (US)	325
Getty (US)	250
Gelsenberg (West German)	215
Commonwealth (US)	185
Wintershall (West German)	175
Marathon (US)	150
Ultramar (US)	140
Aminoil (US)	130
Sun (US)	125
Union Rhein (West German)	125
Occidental (US)	105
Continental (US)	100
Niarchos (Greek)	100
Shaheen (US)	100
Other	2,250
Government	7,890
OPEC	1,845
Iran	675
Indonesia	430
Kuwait	265
Saudi Arabia	120
Algeria	115
Iraq	170
Other	70

Ownership of World Oil Refining Capacity [1]
1 January 1974
(Continued)

	Thousand b/d
Non-OPEC	6,045
Brazil	745
France	730
Mexico	625
Italy	535
Argentina	380
India	280
West Germany	275
Spain	240
Austria	220
Israel	210
Taiwan	200
Finland	195
Egypt	180
Turkey	130
Chile	125
Colombia	110
Peru	105
Greece	100
Other	660

1. Excluding data for the United States (50 states) and Communist countries.

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TECHNICAL TERMS

API Gravity	American Petroleum Institute scale for expressing the weight of petroleum liquids.
Barrel (bbl)	A unit of volumetric measure for liquid petroleum: 1 barrel (bbl) = 42 US gallons = 35 Imperial gallons (approx.) = 159 Liters (approx.)
Barrels per Day (b/d)	The rate of flow from midnight of one day to midnight of the next day. The rate of flow in 1/365th part of a normal year. Used to describe both production and refining capacity.
Barrels per Stream Day (b/sd)	The flow rate during a 24-hour period of actual operation. Normally used to describe refinery throughput rate, reflecting appropriate allowances for periods when a refinery may be shut down for maintenance and/or repairs.
Barrels per Calendar Day (b/cd)	The same as barrels per day. Normally used to describe the effective or annual average refinery throughput rate.
Bunker Fuel	Light or heavy fuel oil for ship's own use. Fuel used by international airlines is sometimes described as "bunkers" for accounting purposes.
Cracking	Refining process by which large molecules are decomposed into smaller, lower boiling molecules in the presence of either heat and pressure (thermal cracking) or a catalyst (catalytic cracking).
Flare	A device for disposal of excess gases by burning (flaring).
Gas oil	A generic term for a petroleum distillate with a boiling range between kerosine and lubricating oil; includes components from which domestic heating (furnace) oils and diesel fuel oils are made.
Liquefied Natural Gas (LNG)	Gaseous forms of petroleum, principally the mixtures of lighter hydrocarbons (methane and ethane) maintained in the liquid state under pressure.
Liquefied Petroleum Gas (LPG)	Gaseous forms of petroleum, principally mixtures of heavier hydrocarbons (butane and propane) maintained in the liquid state under pressure. LPG may be produced in either the extractive or refining phase of the industry but ordinarily considered as a product of refining.
Natural Gas	The component of petroleum which is stabilized in gaseous form for pipeline transit.
Natural Gas Liquids (NGL)	Hydrocarbon liquids recovered in the extractive phase by the processes of condensation or absorption. Natural gas liquids include natural gasoline, condensate, and some liquefied petroleum gases.
Naphtha	A generic term for refined, partly refined, or unrefined gasoline-type petroleum products. May be used as raw material for petrochemical industry or for manufacture of commercial solvents, e.g., cleaning, paint and varnish, lighter fluids, etc.
Petroleum	A naturally occurring mixture of the chemical elements of carbon and hydrogen, with or without other non-metalic elements. Includes crude oil, natural gas, and natural gas liquids.
Proved Reserves	Includes only the estimated crude oil, natural gas liquids, and natural gas recoverable from known deposits under existing economic and operating conditions.
Topping Plant	Simple refinery for the distillation of crude oil to remove light fractions only. The residual material is topped, or reduced, crude.
Tankers:	
a. *Tonnage:*	
i. Deadweight (DWT)	Carrying capacity of a ship expressed in long tons; corresponds to the difference between displacement loaded and displacement light.
ii. Displacement Loaded	Weight in long tons including cargo, passengers, fuel, water, stores, dunnage and such other items as are necessary for a voyage.
iii. Displacement Light	Weight in long tons excluding elements described immediately above.
iv. Gross Registered	The volume of the enclosed space of a vessel expressed in units of 100 cubic feet.
b. *T-2 Equivalent*	A unit by which the capacity and speed of a known tanker can be expressed in terms of a T 2 type tanker of 16,765 DWT and speed of 14.5 knots. Example: A tanker of 190,000 DWT and a speed of 17 knots may be converted as follows: $\frac{190{,}000 \times 17}{16{,}765 \times 14.5} = 13.29$ T-2 Equivalents.
POL	An abbreviation for petrol, oil, and lubricants. A military colloquialism not generally used in the petroleum industry.
Posted Price	An arbitrary price established for most crude oils moving in international trade. The posted price is generally used as the basis for calculating royalties and taxes due to the producing country.

PETROLEUM CONVERSION FACTORS

1. Approximate Conversion Factors for Crude Oil*

FROM \ INTO	Metric Tons	Long Tons	Short Tons	Barrels	Kiloliters (Cubic Meters)	1,000 Gallons (Imp.)	1,000 Gallons (US)
	MULTIPLY BY						
Metric Tons	1	0.984	1.102	7.33	1.16	0.256	0.308
Long Tons	1.016	1	1.120	7.45	1.18	0.261	0.313
Short Tons	0.907	0.893	1	6.65	1.05	0.233	0.279
Barrels	0.136	0.134	0.150	1	0.159	0 035	0.042
Kiloliters (cub. meters)	0.863	0.849	0.951	6.29	1	0.220	0.264
1,000 Gallons (Imp.)	3.91	3.83	4.29	28.6	4.55	1	1.201
1,000 Gallons (U.S.)	3.25	3.19	3.58	23.8	3.79	0.833	1

*Based on world average gravity (excluding natural gas liquids).

2. Approximate Conversion Factors for Petroleum Products

	FROM			
	Barrels to Metric Tons	Metric Tons to Barrels	Barrels per Day to Tons per Year	Tons per Year to Barrels per Day
	MULTIPLY BY			
Motor Gasoline	0.118	8.45	43.2	0.0232
Kerosine	0.128	7.80	46.8	0.0214
Gas/Diesel	0.133	7.50	48.7	0.0205
Fuel Oil	0.149	6.70	54.5	0.0184

3. Volumetric Measures

FROM \ INTO	Cubic Meters	Cubic Feet	US Gallons	Imperial Gallons	Liters	US Barrels
	MULTIPLY BY					
Cubic meter	1.0	35.31	264.18	219.96	999.97	6.285
Cubic foot	0.02832	1.0	7.481	6.229	28.32	0.178
US gallon	0.00379	0.1337	1.0	0.8327	3.785	0.0238
Imperial gallon	0.00453	0.160	1.201	1.0	4.546	0.0286
Liter	0.001	0.0353	0.2641	0.2200	1.0	0.006293
US barrel	0.1590	5.615	42.0	35.0	158.9	1.0

4. **Miscellaneous:**

Units of weight:

Short ton	2,000 pounds
Long ton	2,240 pounds
Metric ton	2,205 pounds

Units of volume:

Measurement ton (ship ton)	40 cubic feet
Register ton	100 cubic feet

Representative conversion factors:

Country	Barrels per Metric Ton
Abu Dhabi	7.493
Algeria	7.713
Angola	7.223
Bahrain	7.335
Congo	7.508
Gabon	7.245
Iran	7.370
Iraq	7.541
Israel	7.286
Kuwait	7.261
Libya	7.615
Morocco	7.602
Nigeria	7.508
Qatar	7.719
Saudi Arabia	7.428
Saudi/Kuwait Neutral Zone	6.849
Turkey	6.400
United Arab Republic	6.901

5. **Rules of Thumb:**

a) Conversion between barrels per day and tons per year:
Barrels per day × 50 = tons per year.
Tons per year ÷ 50 = barrels per day.

b) Volumetric contents of pipelines:
(Diameter in inches)^2 = barrels per 1,000 feet.
Example: 30-inch diameter pipeline would contain approximately 4,752 barrels per mile.

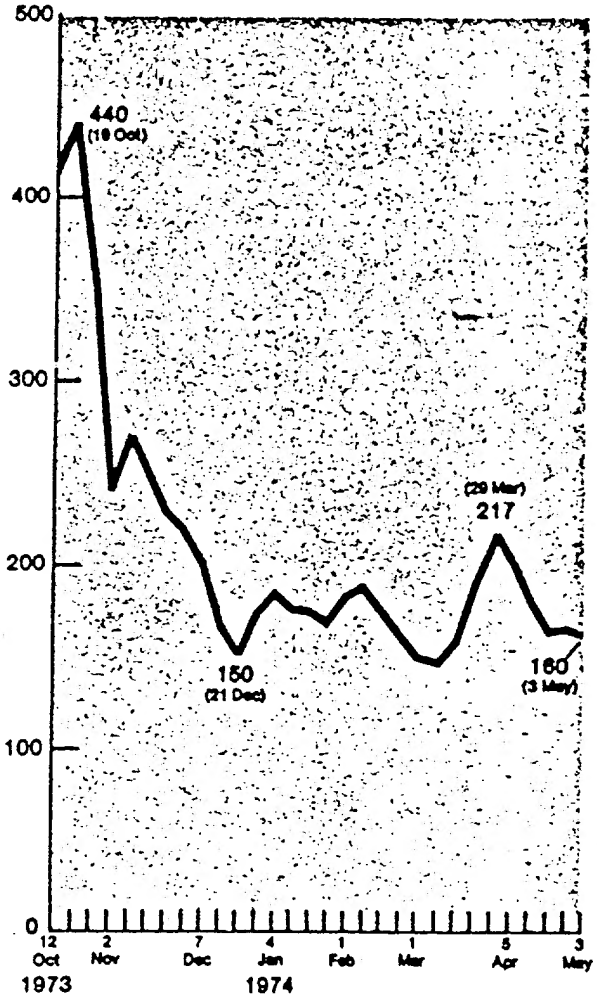
6. Approximate Energy Equivalents (Conversions)

	Energy Content[1]	Coal Equivalent	Oil Equivalent[2]
1 million tons hard coal	7	1.0[3]	0.7
1 million tons coke	6.7	0.96	0.67
1 million tons lignite	2	0.29	0.2
1 million tons liquid fuels	10	1.43	1.0
1,000 million cubic meters natural gas	9	1.33	0.9
1,000 million cubic meters manufactured gas	4.2	0.6	0.42
1,000 KWH electricity	0.88	0.125	0.088

1. One trillion kcal.
2. One thousand barrels of oil per day equals approximately 2 trillion BTUs per year.
3. Standard fuel – theoretical unit of energy, equivalent to 7,000 kcal per kilogram.

Weekly Mullion Index of Voyage Charter Rates for Tankers

Worldscale



This index reflects all rates available to the compilers (the London tanker brokerage Mullion and Company) for single voyage charters of tankers in all trades agreed to (fixed) during the week in question and all previously fixed single voyage charters still in effect on Friday of that week. It is expressed in terms of Worldscale, a table of oil shipment costs on various trade routes for a standard tanker with fixed parameters (size, speed, fuel consumption, manning requirements, etc.) used on the tanker market to express voyage charter rates. The Mullion index applies only to charters for the carriage of so-called "dirty" cargoes which include crude oil and heavy petroleum products such as residual fuel oil.

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